REMARKS

Claims 23-43 are pending in the current application. Claims 23-43 currently stand rejected. Claims 23, 32, and 39 have been amended. Reconsideration and withdrawal of the current rejections to claims 23-43 are respectfully requested in light of the following remarks.

Examiner Interview Summary

Applicants thank the Examiner for her time and consideration during the telephonic interview of October 14, 2008. Applicants note that **the Examiner's Interview Summary mailed on October 22, 2008 in connection with this application does not appear to correspond to this application**, and Applicants do not agree with the contents of this Interview Summary.

During the interview, the parties discussed current rejections to claim 23 under both §§ 112 and 103. The Examiner indicated that the language "without explicitly placing the first geometric construct throughout the second geometric construct" was unclear, not supported by the specification, and not entitled to any patentable weight. Applicants described how that language read on example embodiments of the specification, which disclose a simulation system that can model a region completely filled with an object without the user having to place the object into the region repeatedly until it is filled as part of the simulator setup. Applicants explained that the user inputting the system into the simulator need not define, in (x, y, z) explicit coordinates, the location and other neutronic properties of each object used to fill another – a single instance is sufficient in example methods. Applicants pointed to paragraph [0096] of the original specification for disclosure of inputting several different geometries and positions of geometric constructs. Applicants pointed to paragraph [0098] of the specification as filed for discussing how a neutron interacts with the geometric constructs based on the constructs' geometries and coordinates. Applicants also discussed paragraphs [0095]-[0100] and accompanying figures 7 and 15C and how this enabled the situation where the neutron leaves the first geometric construct and enters a further geometric construct having the same properties as the first, and that this is how a neutron may interact with several first geometric constructs, without the user having to define and place several first geometric constructs.

The Examiner maintained that the language "without explicitly placing the first geometric construct throughout the second geometric construct" was still confusing and not necessarily supported by the specification. In light of this, Applicants have amended each independent claim to remove this language and to recite that a user can model a filled geometric construct "without inputting the at least one neutronic characteristic of the second geometric construct" as discussed during the interview and the specification. The rejections in light of the discussion during the Examiner Interview and this rephrasing are discussed below.

Claim Rejections - 35 U.S.C. § 112

Claims 23 and 39 stand rejected under 35 U.S.C. § 112, first paragraph, for lacking enablement. Claims 35 and 41 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicants respectfully traverse the rejections for the reasons detailed below.

The Examiner maintains the non-enablement and written description rejections under the same rationales presented in the previous Office Action. Applicants respectfully submit that the specification further provides evidence via several example embodiments that specifically enable modeling a neutronic characteristic of a construct as if it were filled with another, which the Applicants have amended into the claim as "defining at least one neutronic characteristic of the second geometric construct as if the second geometric construct were completely filled with a plurality of the first geometric constructs without inputting the at least one neutronic characteristic of the second geometric construct." Paragraphs [0095]-[0100] and accompanying figures 7 and 15C discuss and enable the situation where the neutron leaves the first geometric construct and enters a further geometric construct having the same properties as the first. *See, e.g.*, Spec ¶¶ [0097]-[0098]; FIG. 15C. In this way, the neutron may interact with several first geometric constructs, so long as it remains within a particular region. The interactions are based on neutronic characteristics, including, for example, system geometry, mean free path, boundary reflectivity, and boundary position, **input in a single instance**.

See Spec ¶¶ [0030], [0097]; FIG. 15C. Thus, as stated in the cited paragraphs, because a neutron may continuously interact with a first geometric construct based on characteristics of the first geometric construct while inside the bounds of a second geometric construct, an average neutronic characteristic of a second geometric construct may be defined as if it were filled with a first geometric construct based on a single input of the first geometric construct and its neutronic characteristics, as recited in claims 23 and 39.

With regard to the claim limitation "the first geometric constructs do not possess identical neutronic characteristics" lacking written description support, Applicants respectfully resubmit that, by the argument above, because geometric constructs have different geometric coordinates, they have different neutronic characteristics, i.e. "do not possess identical neutronic characteristics."

Because the specification and figures disclose and enable a person skilled in the art to practice the subject matter of the claims, these claims satisfy the written description enablement requirements of 35 U.S.C. § 112, ¶ 1. Withdrawal of the rejections to claims 23, 35, 39, and 41 is earnestly solicited.

Claim Rejections – 35 U.S.C. § 103

Claims 23-26, 28-29, 32-37, and 39-43 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US Pat Pub 2003/0012324 to Haruyama ("Haruyama"), in view of Solid Edge ("Solid Edge"). Claims 27 and 30 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Haruyama in view of Solid Edge and US Pat 5,936,628 to Kitamura et al. ("Kitamura"). Claims 31, 38, and 44 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Haruyama in view of Solid Edge and US Stat Inv Reg H744 to Iverson ("Iverson"). Applicants respectfully traverse these rejections for the reasons detailed below.

The Examiner maintains the obviousness rejections under the same rationales presented in the previous Office Action. In response to the Applicants' arguments, the Examiner alleges that the recited phrase "as if the second geometric construct were completely filled with a plurality of the first geometric constructs" is merely intended use and results in no structural differences between the claims and the references. Applicants respectfully submit that these terms have been rephrased as "without inputting the at least one neutronic characteristic of the second geometric construct." This explicitly-recited method step of defining neutronic characteristics must be met by the applied references in order to render the method obvious. However, Applicants respectfully submit that Haruyama fails to teach or suggest "defining at least one neutronic characteristic of the second geometric construct as if the second geometric construct were completely filled with a plurality of the first geometric constructs." Haruyama teaches no geometric construct completely filled with another or neutronic characteristics defined by such filling. Rather, FIGS. 11-13 of Haruyama illustrate measuring radioactivity of containers of different geometries and contents. *See* Haruyama,

¶¶ [0041]-[0043] and [0065]-[0067]. This measurement is not a modeling system nor is it filling any region or defining a region as if it were filled for determining a neutronic characteristic of the region for such modeling.

The Examiner does not rely on Iverson, Kitamura, or Solid Edge to teach or suggest, nor do Iverson, Kitamura, or Solid Edge teach or suggest, the "defining at least one neutronic characteristic of the second geometric construct as if the second geometric construct were completely filled with a plurality of the first geometric constructs" as recited in claims 23, 32, and 39 and lacking in Haruyama as discussed above. Because Haruyama, alone or in combination with any of Iverson, Kitamura, and Solid Edge, does not teach or suggest each and every element of claims 23, 32, and 39, it cannot anticipate or render obvious those claims. Claims 24-31, 33-38, and 40-44 are allowable at least for depending from an allowable base claim as discussed above. Withdrawal of the rejections under § 103(a) is respectfully requested.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 23-43 in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Ryan Alley at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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